Northern Engraving Corporation

Baseline Report for the Amended Environmental Cooperative Agreement
Between NEC (West Salem and Galesville) and the Department of Natural Resources
June 23, 2003

On June 23, 2003, following a Public Comment Period and formal public hearing, the Wisconsin Department of Natural Resources (DNR) and Northern Engraving Corporation (NEC) signed an Amended Environmental Cooperative Agreement that adds the NEC facilities in West Salem and Galesville, Wisconsin, to the original Agreement. It was developed under Wisconsin's Environmental Cooperation Pilot Program pursuant to Section 299.80, Wis. Statutes, to evaluate innovative environmental regulatory methods including whole-facility regulation. The original Agreement was first signed June 10, 2002, and included the Holmen and Sparta facilities.

Background

Northern Engraving Corporation manufactures automotive trim, nameplates and other industrial decoratives, using plastic and aluminum as the primary substrates. Presently NEC operates six manufacturing facilities in Wisconsin, Minnesota and Iowa. In addition there are several locations that provide supporting services to these manufacturing facilities. NEC has been actively involved in waste minimization/pollution prevention since 1988 and has on several occasions received recognition for its efforts. These include the Governor's Award for Excellence in Hazardous Waste Reduction in 1991 and 2000 and a P/E/P Award in 1994. NEC volunteered to help the DNR pilot new approaches to environmental regulation through the Cooperative Program.

The facilities included in the Agreement are as follows:

Sparta facility
803 South Black River Street, Sparta, Monroe County

Holmen facility
1023 Sand Lake Road, Holmen, La Crosse County

West Salem facility
600 Brickl Road, West Salem, La Crosse County

Galesville facility
20875 West Gale Avenue, Galesville, Trempealeau County

Under Section XII of the Agreement, NEC agrees to submit a baseline report within 180 days of the signing. The following report reflects the performance evaluation conducted pursuant to the Agreement. It has been shared with the Stakeholders Group and is available for public inspection at the NEC offices and local libraries in Sparta, Holmen, West Salem and Galesville.

Baseline Performance Evaluation

Regarding the Interested Persons Group:

The Northern Engraving Corporation Stakeholders' Group is composed of representatives from business, government and academia in Monroe, La Crosse and Trempealeau counties who are interested in environmental stewardship and the impact of manufacturing on local communities. A member representing Trempealeau County was added October 16, 2003. The group was formed in May 2001, and began by surveying the evolution of environmental law and regulation and reviewing the principles of environmental management as developed under the international standard, ISO 14001. It then examined the outcomes from implementation of the standard at the Sparta, Waukon, Lansing, West Salem and Spring Grove manufacturing facilities. Additionally, Northern Engraving shared information on the shifting of manufacturing capacity, applications for construction permits and the formulation and enactment of the Cooperative Agreement with the Wisconsin Department of Natural Resources.

Group members include the following individuals:

John Burke, Register of Deeds, Monroe County
Mark Wienkes, Natural Resources Conservation Service, Sparta
Tim Vernier, Norris/Vernier Motors, Tomah
Dr. Michael Collins, Viterbo University, La Crosse
Jordan Skiff, Department of Public Works, Sparta
Tim Pickering, Department of Public Works, Galesville
Bruce Corning, Northern Engraving Corporation
Randy Nedrelo, Northern Engraving Corporation

The Stakeholders Group met twice in 2002 (June 10 and September 4). At the June meeting Dr. Collins and Mr. Skiff joined representatives of the Wisconsin Department of Natural Resources and Northern Engraving for the signing of the Cooperative Agreement. Mr. Vernier, Mr. Skiff and the Northern Engraving representatives met in September to review a summary of environmental objectives and outcomes for the manufacturing facilities. They also discussed major corporate manufacturing changes and examined the Sparta facility's outcomes for the 2002 objectives and targets through July. Stakeholders asked about the objectives that are above target and their relationship to product mix and sales. Randy Nedrelo, Northern Engraving, explained that product mix changes might have had an impact on solvent usage. They were impressed that the Volatile Organic Compound* (VOC) and Hazardous Air Pollutant (HAP) emission results continue to show significant reductions even after the "low hanging fruit" was picked during the first two years of the environmental management system. The reduction in water usage resulting from the recycling of process water was also considered to be outstanding.

The group then discussed the changes in VOC and HAP emissions as compared to changes in sales at West Salem, Spring Grove and Waukon. This showed that the implementation of environmental management system programs significantly reduced VOC and HAP emissions in relationship to sales. If sales grew, emissions continued to fall below the previous levels. When sales fell, emissions fell by a greater percentage than sales.

On April 10, 2003, the Stakeholders Group again convened in Sparta to review the outcome of efforts toward 2002 objectives and targets, visit remediation of a site recently impacted by the overfilling of an underground solvent tank, and to discuss the Amendment to the Environmental Cooperative Agreement.

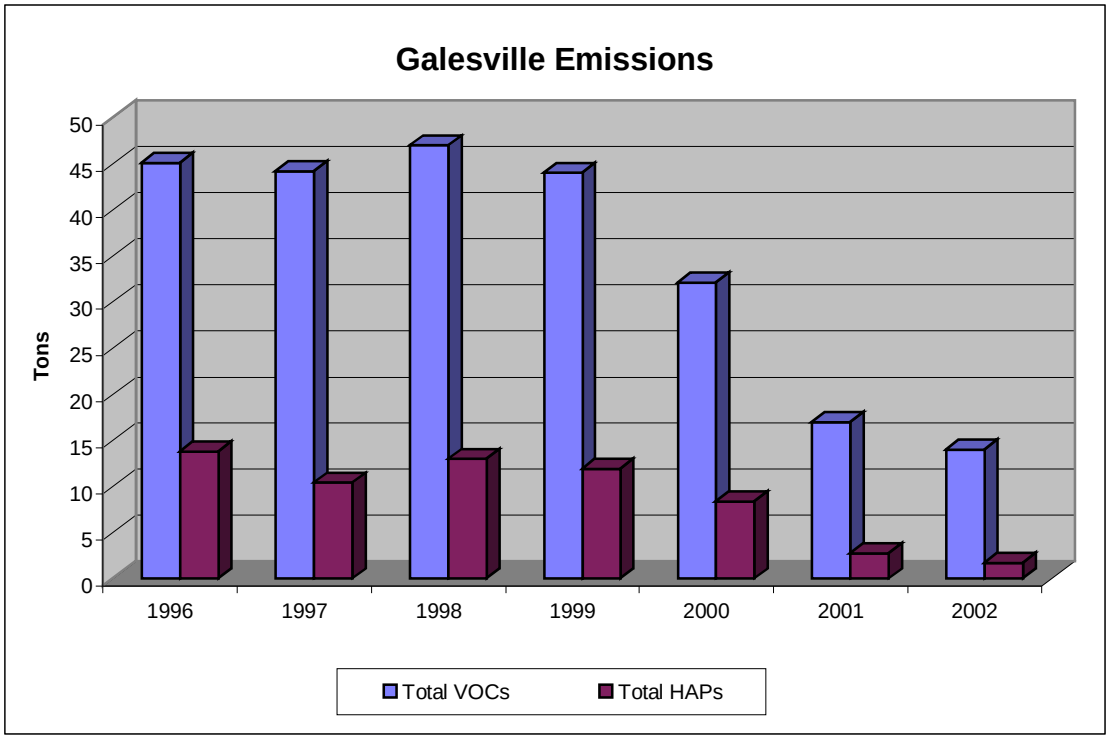
The group met again on October 16, 2003 at the West Salem facility where the plant manager showed and explained the plant's products, described the processes used, and presented some of the challenges that accompany manufacturing today. He then led the group on an extensive tour of the facility's production activities.

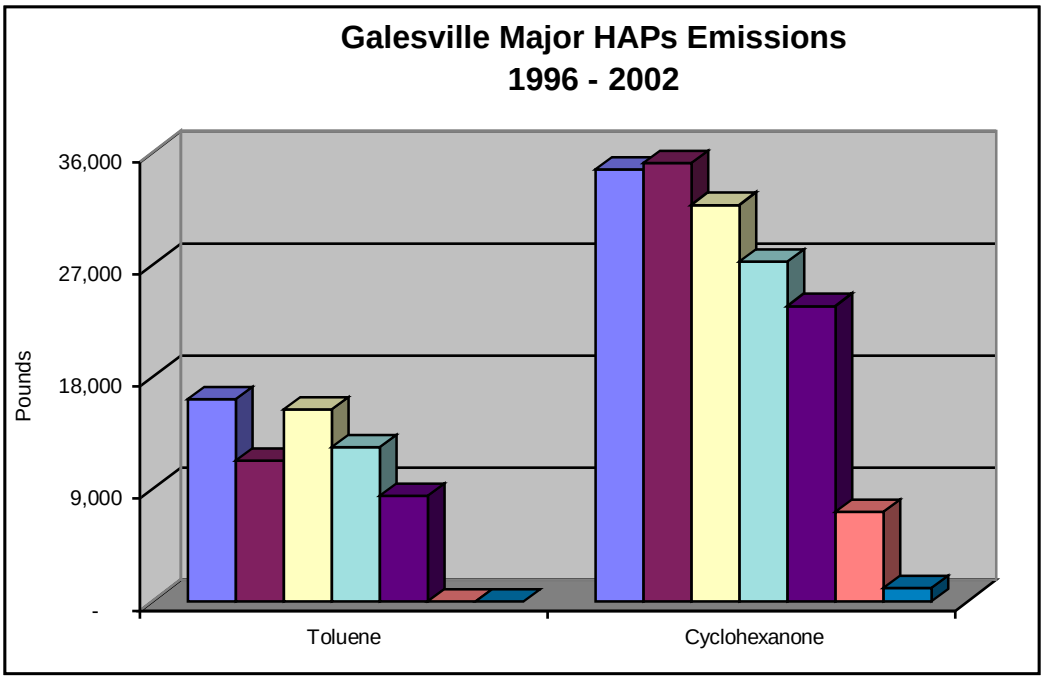
*For a glossary of terms see Appendix A.

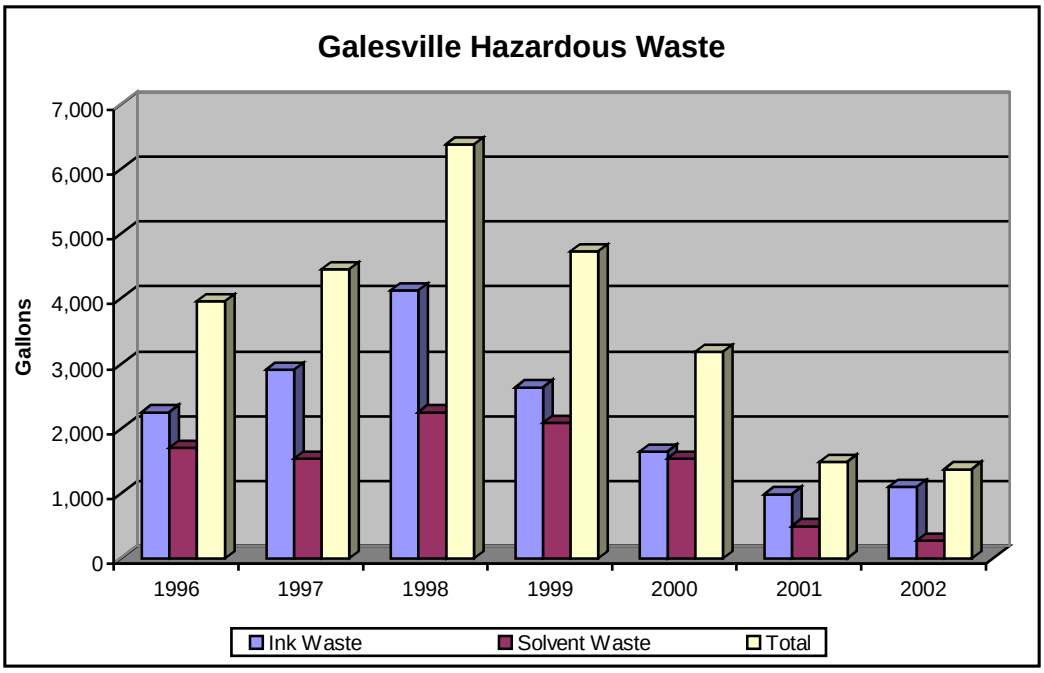
Regarding Commitments to Superior Environmental Performance:

Galesville

The charts below reflect the Galesville facility's air emissions and hazardous waste performance over the past seven years. These significant real reductions in solvent usage, total VOC's, total HAP's, and targeted HAP's are the result of the reformulation of inks and solvents, greater use of distillation, and improvements to solvent management. The reductions in 2001 and 2002 were impacted by a downturn in production; however, in each year, the respective percent of reduction in sales was accompanied by greater percentage reductions for both VOC's and HAP's.







Additional data regarding air emission and hazardous waste generation is available at Appendix C.

Following a successful external audit, the Galesville facility was registered to the international environmental standard, ISO 14001, on July 31, 2003. The facility will undergo an annual external audit from their registrar, QMI, to ensure compliance with the ISO standard.

In its annual planning, the facility identified its environmental aspects for 2003 and ranked them based on the significance of their environmental impact. From these impacts, they adopted the following environmental objectives and targets for 2003:

1. OBJECTIVE: Reduce facility VOC emission.
   TARGET: Reduce facility VOC emissions by 10% CY 2003 vs. CY 2002.

2. OBJECTIVE: Reduce facility hazardous waste generation.
   TARGET: Reduce facility hazardous waste generation by 10% CY 2003 vs. CY 2002.

3. OBJECTIVE: Reduce facility solid waste generation.
   TARGET: Reduce facility solid waste generation by 10% CY 2003 vs. CY 2002.

4. OBJECTIVE: Reduce facility energy use.
   TARGET: Reduce facility electricity use by 5% CY 2003 vs. CY 2002.
   TARGET: Reduce facility natural gas/LP gas use by 5% CY 2003 vs. CY 2002.

West Salem

The West Salem facility successfully completed an external registration audit and was registered to the ISO 14001 standard on April 20, 2000. Since then it has received exemplary results from the annual external surveillance audits.

During 1999, the West Salem facility began preparations for registration to ISO 14001. In 2000, they selected the following objectives for 2000 - 2001:

- During the period June 2000-May 2001, reduce MEK usage to 5 tons.
  By June 2000, MEK was being replaced with a nonpolluting solvent and usage was at 0.9 ton per month. By December it dropped to 0.2 ton.

- Recycle 66% of PM acetate cleanup solution by August 2000.
  PM acetate recycling introduced numerous daily requirements and supervisory responsibilities. In July percentages were varying between 0 and 75%. The objective was continued through 2001, when they steadily maintained a level averaging 66%.

- Reduce annual solvent use 5% by May 31, 2001.
  Through reformulation, recycling and improved solvent management, annual solvent use was reduced by 17% in May 2001.

- Reduce daily discharge concentrations to the Publicly Owned Treatment Works.
  Daily discharge of phosphorus was reduced from a daily average of 7.28 pounds in 1998 to 0.73 pound average in 2000.

New objectives were set for 2002.

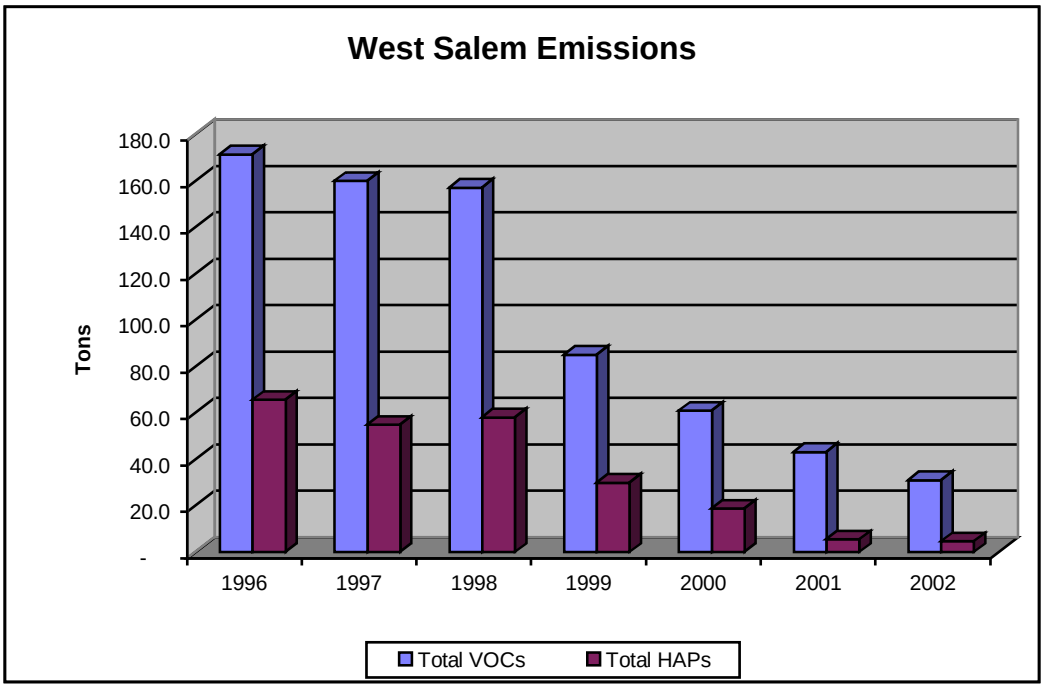
- Reduce VOC emissions by 10% CY 2002 vs. CY 2001.
  Converting to water-based spray operations and improving solvent management resulted in a 30% reduction (12.9 tons) in VOC emissions.

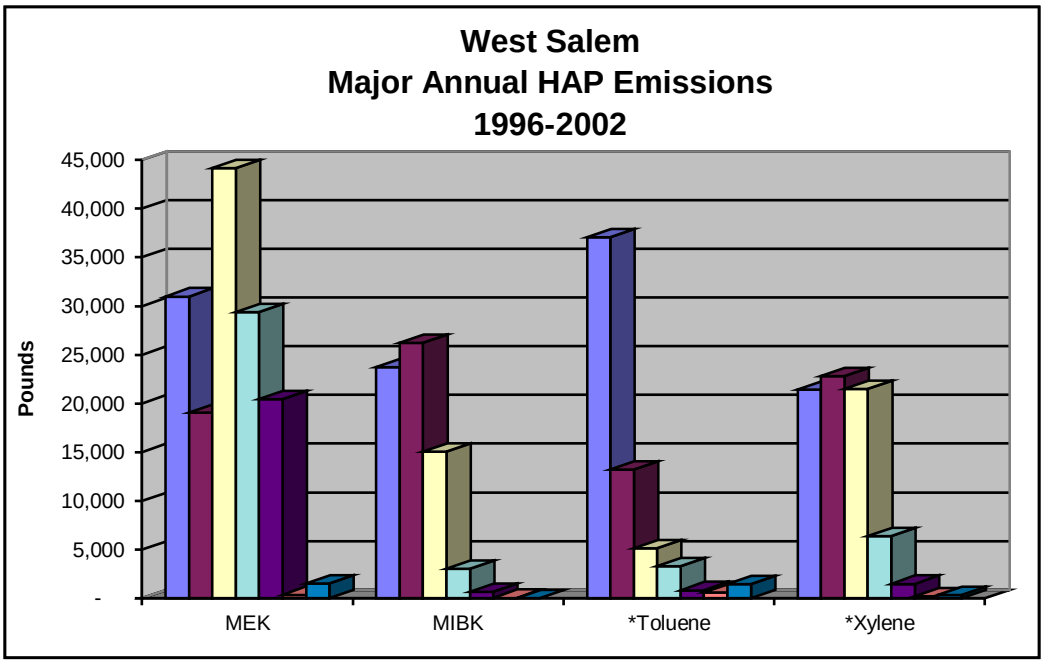
- Reduce facility solid waste generation by 10% CY 2002 vs. CY 2001.
  Through improved supervision, greater employee involvement and increased recycling of molded plastic, solid waste generation was reduced by 182 tons (31%).

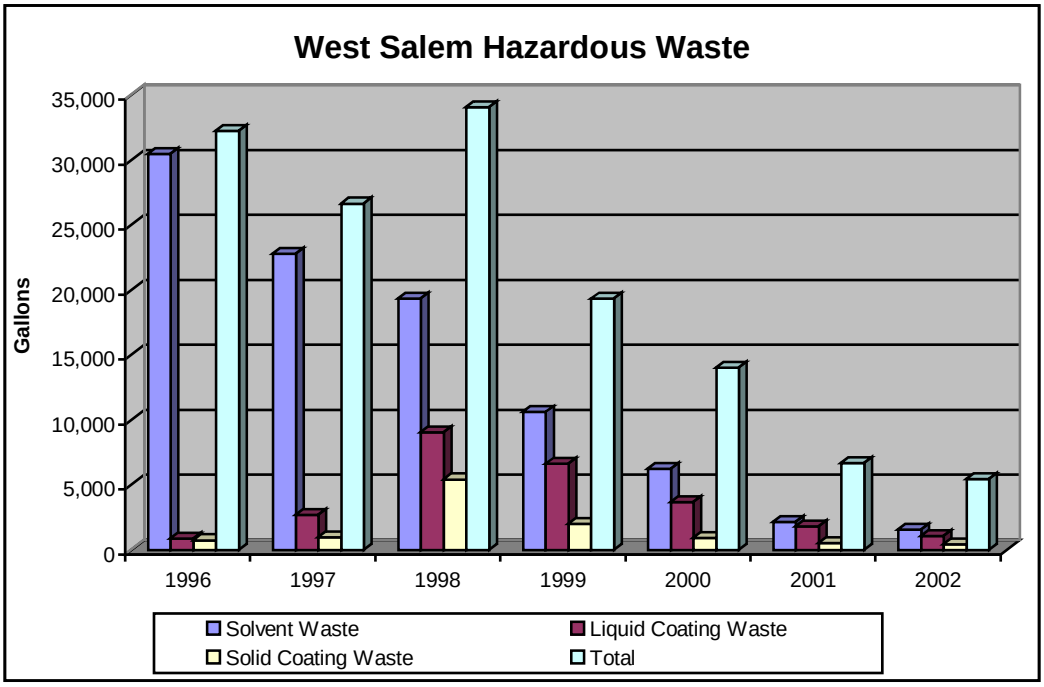
- Maintain electricity use at a .25 ratio of 1000 kwh/$1000 sales for CY 2002.

- Maintain natural gas / LP gas use at a 1.6 ratio mmbtu/$1000 sales for CY 2002.
  Numerous measures were instated to reduce electricity and gas usage; however, neither energy goal was attained. This is a long-term goal that is carried forward to 2003.

The charts below reflect the past seven years of air emissions and hazardous waste generated by the West Salem facility.







Additional data regarding air emission and hazardous waste is available in Appendix B.

For 2003, the West Salem facility adopted the following environmental objectives and targets:

1. OBJECTIVE: Reduce facility VOC emission.
   TARGET: Reduce facility VOC emissions by 2% from a forecast of 53.5 tons

2. OBJECTIVE: Reduce facility solid waste generation.
   TARGET: Reduce facility solid waste generation by 10% CY 2003 vs. CY 2002.

3. OBJECTIVE: Reduce facility hazardous waste generation.
   TARGET: Reduce facility hazardous waste generation by 5% CY 2003 vs. CY 2002.

4. OBJECTIVE: Reduce facility energy use.
   TARGET: Reduce facility electricity use by 2% from a projection of 13,700 (1000 KWH)
   TARGET: Reduce facility natural gas/LP gas use by 2% from a projection of 59,000 MMBTU

Regarding Operational Flexibility:

Time saved in obtaining permits:
From the signing of this agreement on June 10, 2002, through the remainder of 2002, one construction permit was requested. The agreement allowed NEC to begin construction 10 days later, saving approximately 45 days.

Time saved by reduction in record keeping and administrative requirements:

Requirement Eliminated:	Approximate Time Saved:
West Salem:	
Daily calculations for demonstrating RACT compliance	2.5 hours/day
Compiling formulas for demonstrating LACT compliance	2.0 hours/day
Galesville:	
Compiling formulas for demonstrating LACT compliance	15 hours/month

Requirements Added:	Additional Time Required:
Compiling the 6 Month Interim Report	15 minutes/month
Compiling West Salem/Galesville Baseline Report	40 hours

NEC experienced the following changes in the management of the air permit program:

- Changes to record keeping allowed NEC to eliminate an additional 12 forms, six work instructions, and 4,700 pages of records and reports/year.

- Facility-wide compliance limits are easier to manage than the line specific limits of previous permits.

- Monthly calculation of compliance is based on purchasing data that is reconciled against inventories. This data is generally more accurate than daily usage data.

- A shorter lead-time for construction permits gives NEC the opportunity to clearly define its needs before submitting an application, thereby reducing the need for speculative permitting.

- West Salem estimates an avoidance of $29,000 in annual costs associated with incineration for RACT ($10,000 fuel, $18,000 stack testing, $900 incinerator maintenance)

Regarding Overall Assessment of the Success of the Agreement:

Northern Engraving has neither sought nor received public recognition or awards for its efforts toward the Cooperative Agreement or the environmental management system.

During development of the Agreement, challenges were met directly, and through the dedicated efforts of individuals in the Department of Natural Resources and Northern Engraving Corporation creative and compliant solutions were discovered. Any success is the direct result of these efforts to forge new and genuinely innovative approaches that will, in time, dramatically improve the regulation of industry and open the creative stream of ideas to improve resource utilization and pollution prevention.

The Department of Natural Resources and Northern Engraving continue to work together to improve communications and understanding of each other's needs and requirements. Together we will introduce new methods that focus resources on activities that truly improve our environment.

Questions and requests for additional information should be directed to Bruce Corning at the address below:

Northern Engraving Corporation
803 Black River Street
Sparta, Wisconsin 54656

Submitted by:
Northern Engraving Corporation

Bruce Corning

November 25, 2003

Appendix A
Glossary

Hazardous Air Pollutants (HAP's): One hundred eighty-nine chemicals identified by the EPA as exhibiting greater health risk.
Examples: Toluene, Xylene, Glycol Ethers

Hazardous Waste: Waste with a chemical composition or other properties that make it capable of causing illness, death or some other harm to humans and other life forms when managed or released to the environment. Hazardous wastes are characterized for ignitability, corrosivity, reactivity, and toxicity. (The vast majority of Northern Engraving's hazardous waste is characterized as ignitable or corrosive.)

KWh - kilowatt-hours: The standard measure of electricity used.

LACT – Latest Available Control Technology and Operating Practices:
Typically a limitation on VOC content for a process proposed by a permitee.

mcf - thousand cubic feet: The standard measure of volume of natural gas used.

MEK - methyl ethyl ketone: a hazardous air pollutant listed by the EPA.

PM Acetate: a volatile organic compound

RACT – Reasonably Available Control Technology: Regulatory limitations on the VOC content of process materials

Solid Waste: Any waste, whether it is solid, semisolid or liquid.

Volatile Organic Compounds (VOC's): Organic materials that evaporate into the air.
Examples: Solvents used for clean up or thinner and solvents present in coatings, inks and sprays.

YTD – Year-to-Date

Appendix B West Salem - Air Emissions

		1996	1997	1998	1999	2000	2001	2002
VOCs (tons/year)		171	160	157	85	61	43	31
NOx		1.50	2.08	2.58	1.78	2.03	1.99	2.06
CO		0.34	0.47	1.43	1.10	1.45	1.53	1.55
SO_2		0.23	0.95	0.02	0.01	.01	.01	.01
PM		0.05	0.16	0.14	0.11	0.14	0.14	0.14
PM10		0.02	0.13	0.19	0.15	0.21	0.23	0.23
CLEAN AIR ACT								
CHEMICAL (lb/yr)	CAS #							
Glycol Ethers	NA	7,964	13,749	16,931	13,327	11,010	6497	5312
MEK		30,969	19,038	45,173	29,385	20,423	352	1489
Methanol	67-56-1	6,381	6,415	3,554	397	76	181	169
Triethylamine	121-44-8			255	581	1,956	1606	433
Toluene	108-88-3	37,071	13,191	5,135	3,278	816	596	1421
Xylene	1330-20-7	21,423	22,804	21,478	6,389	1,472	177	335
Vinyl Acetate	108-05-4			198	106	31	9	
Ethyl Benzene	100-41-4	3,601	6,660	7,951	2,677	671	176	72
MIBK	108-10-1	23,717	26,197	15,028	3,027	660	35	1
Naphthalene	91-20-3	10	33	128	117	42	107	72
Cumene	98-82-8	2	9	388	261	280	6	8
Phenol	108-95-2				18			
Isophorone	78-59-1	73	1,426	830	94			
Methyl Methacrylate	80-62-6						89	17
M-Xylene	108-38-3		2	62				
Benzene	71-43-2			5				
Hexane	110-54-3			5	11	13	7	
Formaldehyde	50-00-0			5	2			37
2,2,4 Trimethylpentane	540-84-1							122
TOTAL (tons)		66	55	59	30	19	4.9	4.7

West Salem – Waste

		1996	1997	1998	1999	2000	2001	2002
Solvent Waste	Gallons	30,470	22,806	19,363	10,644	6,240	2,184	1,595
Solvent for Recycling	Gallons	0	0	0	0	3,120	2,080	2,349
Liquid Coating Waste	Gallons	880	2,695	9,075	6,655	3,685	1,815	1,100
Solid Coating Waste	Gallons	770	990	5,445	2,035	935	550	440
Waste Absorbents	Gallons	110	165	165	0	55	55	0
Total	Gallons	32,230	26,657	34,048	19,334	14,035	6,680	5,484
Solid Waste	Tons	854	902	1235	893	990	599	289

West Salem – Water

		1997	1998	1999	2000	2001	2002
Total Water	Gallons	14,292,100	25,105,920	34,725,900	23,902,600	10,314,600	13,195,100

Noncontact Cooling	Gallons	208,000	3,780,400	11,284,000	6,316,300	1,353,100	NONE

Appendix C Galesville - Air Emissions

		1996	1997	1998	1999	2000	2001	2002
VOCs (tons/year)		45	44	47	44	32	17	14
NOx		0.62	0.69	0.77	0.68	0.57	0.31	0.29
CO		0.13	0.14	0.15	0.14	0.12	0.06	0.06
SO2		0.02	0.01	0.01	0.01	0.01		
PM		0.02	0.02	0.02	0.02	0.02	0.01	0.01
CLEAN AIR ACT CHEMICALS (lb/yr)	CAS #							
Glycol Ethers		9,961	8,736	9,979	10,814	7,664	5,640	3,284
MEK	78-93-3		7	34				
Cumene	98-82-8	628	756	521	528	514	479	4
Ethyl Benzene	100-41-4		8	10	10	23	1	3
Isophorone	78-59-1	490						
MIBK	108-10-1				8			
Naphthalene	90-20-3	7	7	3	6	1		4
Toluene	108-88-3	16,224	11,306	15,417	12,378	8,463	-	-
Vinyl Acetate	108-05-4							
Hexane	110-54-3			2		1		
Xylene	1330-20-7	318	31	41	45	24	502	
Methyl Methacrylate	80-62-6			29	24	14	4	6
Methanol	67-56-1				38	6	2	
Benzene	71-43-2					1		
Diethanolamine	111-42-2				4			
Hydroquinone	123-31-9				5			
Dibutyl Phthalate	84-74-2		2	2	5	1		1
m-Xylene	108-38-3						27	36
Methylene Chloride	75-09-2				19	56		
2,2,4 Trimethylpentane	540-84-1							36
Total (tons)		13.81	10.43	13.0	11.9	8.4	3.3	1.7

Galesville - Waste

		1996	1997	1998	1999	2000	2001	2002
Solvent Waste	Gallons	1,705	1,540	2,255	2,090	1,540	495	275
Ink Waste	Gallons	2,255	2,915	4,128	2,640	1,650	990	1,100
Galesville Total	Gallons	3,960	4,455	6,383	4,730	3,190	1,485	1,375
Solid Waste	Tons	236	256	302	258	177	88	116

Galesville – Water

		1997	1998	1999	2000	2001	2002
Total Water	Gallons	3,929,300	4,575,600	4,294,400	2,835,300	2,429,900	1,165,700
Noncontact Cooling	Gallons	0	179,500	578,100	0	594,720	526,880